## Claims

[c1] 1.A method of protecting multiple feeder circuits fed from a shared electrical distribution system, comprising:

providing a bypass line, said bypass line being configured to bypass separable circuit breaker contacts in each of the feeder circuits between a load side and a line side of the electrical distribution system;

providing bypass switches in said bypass line, said bypass switches being configured to selectively couple each of the feeder circuits to said bypass line;

providing a fault lockout protection controller coupled to said bypass line;

controlling said fault lockout protection controller to detect the existence of a fault condition on said load side of the feeder circuit selectively coupled to said bypass line prior to closing said separable circuit breaker contacts of the feeder circuit; and

controlling said fault lockout protection controller to prevent closure of the separable circuit breaker contacts upon detection of said fault condition.

[c2] 2.The method of claim 1, wherein controlling said fault lockout protection controller to detect the existence of said fault condition comprises:

providing a test voltage to said load side to induce a test current in said load side, said test voltage being less than voltage in said line side;

sensing said test current to provide a sensed signal indicative of an electrical characteristic of said test current; and

comparing said sensed signal to a predetermined value, said fault condition being present if said predetermined value is met.

[c3] 3.The method of claim 2, wherein comparing said sensed signal to a predetermined value comprised:

calculating a load side current in response to said sensed signal; and

comparing said load side current to a predetermined current threshold.

[c4] 4.The method of claim 2, wherein providing said test voltage comprises:

providing a silicon controlled rectifier in said bypass line, said silicon

controlled rectifier for ramping up voltage in said bypass line.

[c5] 5.The method of claim 4, further comprising:
providing an impedance device in said bypass line prior to said silicon controlled rectifier, said impedance device for reducing voltage in said bypass line below voltage of said line side.

[c6] 6.The method of claim 2, further comprising:
providing an impedance device in said bypass line, said impedance device for reducing voltage in said bypass line below voltage of said line side.

[c7] 7.The method of claim 2, wherein sensing said test current comprises:
providing a current transformer about said bypass line, said current transformer for sensing said test current in said bypass line.

[c8] 8.The method of claim 2, wherein providing said test voltage comprises:
generating said test voltage signal in said bypass line from a signal generator coupled to a voltage transformer.

[c9] 9.An electric motor control center, comprising
electric motors;
bypass switches in said bypass line, said bypass switches being configured to selectively couple each of said electric motors to said bypass line;
a logic sequence controller, said logic sequence controller being configured to control opening and closing said motor starters and said bypass switches; and
a fault lockout protection controller coupled to said bypass line, said fault lockout protection being configured to selectively detect the existence of a fault condition on said load side at each of said electric motors prior to closing said motor starters, and to selectively prevent closure of said motor starter for each of said motors upon detection of said fault condition.

[c10] 10.The electric motor control center of claim 9, wherein said fault lockout protection controller detects said fault condition when coupled to said electric motors by said logic sequence controller closing said bypass switch.

[c11] 11.The electric motor control center of claim 10, wherein said fault lockout protection controller:
provides a test voltage to said load side to induce a test current in said load side;
senses said test current to provide a sensed signal indicative of an electrical characteristic of said test current; and
compares said sensed signal to a predetermined value, said fault condition being present if said predetermined value is met.

[c12] 12.The electric motor control center of claim 11, further comprising a silicon controlled rectifier to provide said test voltage.

[c13] 13.The electric motor control center of claim 12, further comprising a current transformer about said bypass line, said current transformer for sensing said test current in said bypass line.

[c14] 14.The electric motor control center of claim 13, wherein said silicon controlled rectifier further includes an impedance device being positioned in said bypass line to reduce voltage in said bypass line below voltage of said line side.

[c15] 15.The electric motor control center of claim 11, futher comprising:
a signal generator being configured to generate a voltage signal; and
a voltage transformer arranged to provide said voltage to said load side in response to said voltage signal.

[c16] 16.The electric motor control center of claim 11, further comprising:
a current transformer about said bypass line, said current transformer for sensing said test current to provide said sensed signal indicative of said electrical characteristic of said test current to an electronic trip unit operatively coupled to said motor starter.

[c17] 17.A circuit breaker, comprising:
an over-center toggle mechanism, said over-center toggle mechanism being configured to move between an open position and a closed position;

separable breaker contacts movable by said over-center toggle mechanism between said open position and said closed position, said separable breaker contacts being configured to connect a load side to a line side of an electrical distribution system in said closed position and to disconnect said load side from said line side in said open position;

a fault lockout protection controller, said fault lockout protection controller being configured to detect the existence of a fault condition on said load side, and including means for preventing closure of said separable breaker contacts upon detection of said fault condition.

[c18] 18.The circuit breaker of claim 17, further comprising:

a bypass line, said bypass line being configured to bypass said separable breaker contacts; and

a bypass switch, said bypass switch being positioned in said bypass line for coupling said fault lockout protection controller to said load side.

[c19] 19.The circuit breaker of claim 18, wherein said means for preventing closure of said separable breaker contacts is selected from the group consisting of an under voltage protection module and a blocking solenoid module.

[c20] 20.The circuit breaker of claim 18, further comprising:

means for actuating said bypass switch to couple said fault lockout protection controller to said load side.

[c21] 21.A method of protecting a circuit, comprising:

blocking separable contacts of an electrical distribution system from closing;

initiating a fault detection sequence in a fault lockout protection controller, said fault lockout protection controller being configured to detect the existence of a fault condition on a load side of said separable contacts;

leaving said separable contacts blocked from closing upon detection that said fault condition is present; and

unblocking said separable contacts from closing upon detection that said fault condition is not present.

[c22] 22.The method of claim 21, wherein blocking separable contacts of said electrical distribution system from closing comprises:
providing means for preventing closure of said separable breaker contacts selected from the group consisting of an under voltage protection module and a blocking solenoid module.

[c23] 23.The method of claim 22, wherein detecting the existence of a fault condition on said load side comprises:
providing a test voltage to said load side to induce a test current in said load side;
sensing said test current to provide a sensed signal indicative of an electrical characteristic of said test current; and
comparing said sensed signal to a predetermined value, said fault condition being present if said predetermined value is met.

[c24] 24.The method of claim 23, wherein providing said test voltage comprises:
providing a silicon controlled rectifier in a bypass line connected to said load side.

[c25] 25.The method of claim 24, wherein sensing said test current comprises:
providing a current transformer about said bypass line, said current transformer for sensing said test current in said bypass line.

[c26] 26.The method of claim 23, wherein providing said test voltage comprises:
generating said test voltage signal in a bypass line connected to said load side, said test voltage being generated by a signal generator coupled to a voltage transformer.